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**Valuation of Small and Medium Enterprises (SMEs) in Mexico
subtheme: Corporate Strategy an Entrepreneurial Perspective**

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Valuation of Small and Medium Enterprises (SMEs) in Mexico

The purpose of our work is to define the main characteristics of the small and medium enterprises in Mexico (SMEs) for then evaluating how these enterprises create value. We will define the main variables that affect the creation of value for then calculate if these SMEs are really creating it or not. The main variables will be related to the strategic decisions which are based in sales and production and how the variables related to these, make the SMEs create or destroy value. Our valuation models will be based in the Economic value Added Model and the Rion, Geo y Valore model.

The purpose of this work is to relate the concepts of Corporate Strategy with the foundations of Finance, mainly in what refers to real assets, corporate strategy and its relation to the creation o value.

The main objectives of our work are:

- To reach an approach where corporate strategy concepts may be applied in the SMEs.
- To make this approach useful in the SMEs decisions, mainly because the companies are using real assets that have an opportunity cost, and the main difficulty is that in most cases financial assets related to the real assets do not have a sound financial market.
- To evaluate, even without a sound financial market, whether the SMEs in Mexico are creating economic value added or not.

The specific objectives of this work, due to the fact that it is a conceptual and documental work are:

- To find out the main characteristics of the SMEs in Mexico
- To find out the main characteristics of the real assets in which these SMEs invest.
- To find out and explain how corporate strategy concepts are related to real assets.
- To adapt the use of EVA or the Rion, geo y valore models to the SMEs in Mexico.

From seventies the world initiated a great transformation due to the fall of the gold, the globalization, the neoliberalism, the technological changes, the acceleration of the communications, the development of the international trade and as a result, of the international finance and the change on how the companies had come working in the world.

As Levi¹ indicates:

1. " There has happened a liberalization of the trade and of the investments across the reductions in the tariffs, in the quotas, in the monetary controls and in other impediments for the international flow of goods and of the capitals.
2. A shrug(shrinking) has happened without precedent of the " economic space " across rapid improvements in the technologies of communications and transport and the consistent reductions have been observed in the costs. "

This has caused that the changes that have happened in the Mexican economy, specially from 1983, were resulting in a corporate competition much more aggressive that, accompanied of technological changes and the transition towards an opened economy, the companies were facing a more hostile environment and of major strategic and financial relevancy as for the form of evaluating the companies.

The models of appraisal have got up-to-date and, in many cases, have destroyed and forgotten the traditional ones as the yield of the investment (ROI) or the financial ratios. The new models like the EVA (Economic Added Value) or the RION, GEO and VALORE, have not been sufficiently proven nor spread in Mexico.

The importance of the research for the business schools in Mexico, takes root in the fact that here the works have been basically orientated towards the companies that quote in the Mexican Stock Exchange. This is not bad, nevertheless, we have

¹ Levi, Maurice D." Finanzas Internacionales, Un estudio de los mercados y de la administración financiera de empresas multinacionales", McGraw-Hill Interamericana Editores, S.A. de C.V., tercera edición, México, 1997, p. 5

a problem only about hundred fifty companies quote their stocks in the stock exchange. The rest of the companies are evaluated with the traditional financial methods or not valued at all. Are they generating economic value added?

Evolution of Mexican SMEs.

We may go back to Rodríguez² work where he relates the low development of Mexican SMEs with the colonial days. In his work, Rodriguez establishes that mercantilism slowed down the development of the firms. He considered that the Catholic King established a monopoly of trade with Indias, the control of trade among Spain and the new continent through the Casa de Contratación de Sevilla, an institution that established what was to be seeded and traded, the taxes, the special taxes as the diezmo (10% of the income), the alcabala (4% on sales) and el quinto del Rey (a special tax on silver) among others. With these laws, the entrepreneurial effort was castrated.

Another problem was the location of the cities, up in the forests, in the middle of the countries or far away from the sea. All these became a natural block to trade and development. We must consider that the thirteen British colonies were located by the side of the sea or from the rivers. How much work, effort and costs would it take to carry merchandises from the Port of Veracruz to Mexico City? If we add to the encomienda (the possession of people that was granted to the Spaniards so they could work for them, a kind of slavery), the possession of land by the colonial government and the mita (the appropriation of people to do public work). These are the roots of Mexican SMEs, that's one of the reasons for the lack of entrepreneurial spirit in Mexico and in other Latin American countries.

Actual Conditions: In Mexico we have classified our enterprises in micro, small, medium and big. Its not the same classification that is being used in other countries. This classification is used because micro enterprises are too many. With the Economic Census of 1999 the importance of the SMEs in Mexico was demonstrated due to the fact that according to the Organization for Economic Cooperation and Development (OECD) they represent 99%. In Latin America the

² Rodríguez, Leonardo(1980), "Planificación, Organización y Dirección de la Pequeña Empresa", USA, South-Western Publishing Co.

figures vary from 95% to 99% and specifically the number of micro companies vary from 60% to 90% of all the economic units.

In Mexico these companies are classified by the number of workers and according to the “Diario Oficial”, the official diary of the government, of March 30th., 1999 they are classified as follows:

March 30th. 1999	SECTOR		
	CLASIFIED BY NUMBER OF WORKERS		
Size	Industry	Trade	Services
Micro	0-30	0-5	0-20
Small	31-100	6-20	21-50
Median	101-500	21-100	51-100
Big	501-and more	101- and more	101- and more

However according to the “Ley para el Desarrollo de la Competitividad de la Micro, Pequeña y Mediana Empresa” (Law for the Development of Competitiveness for Micro, Small and Medium Enterprises) published in December, 2002. The classification is as follows:

Size/Sector	STRATIFICATION BY NUMBER OF WORKERS		
	Industry	Trade	Services
Micro	0-10	0-10	0-10
Small	11-50	11-30	11-50
Median	51-250	31-100	51-100

Most companies in Mexico are micro, small and medium (MSM) and concepts referred to corporate strategy, economic value added or financial assets are not applied, at least explicitly. Then we need to know the characteristics of these MSM companies. According to Ayuzabeth de la Rosa³ the main characteristics are:

³ Rosa Albuquerque, Ayuzabeth(2000), “La Micro, pequeña y mediana empresa en México: sus saberes, mitos y problemática”, Revista Iztapalapa, México, enero-junio del 2000

- According to its organization and management, it is a family enterprise in which the organization structure is constructed according to the personal needs of the owner. It lacks of a supervisors and the management is either efficient or non efficient. Informal relations are more important than the formal ones, decision making is centralized and another characteristic is that law and rules are ignored.
- According to the entrepreneur-owner, he is good for doing everything, he has big influence within the organization, his vision of the company is for a very short term, he owns the company as a working media, and according to this, the life of the firm is the life of the owner, and as a manager, he reacts to environment conditions after things happen. They do not want to spent money in training workers, they think it is useless.
- Related to work force, workers qualification is either to high or to low. According to this, productivity is high or low. Labor Law is not accomplished, unions or working contracts do not exist, investment for every working position is low and for many workers this job represents the first job in their entire life.
- From the financial point of view, these companies can not get loans and as a market for financial assets does not exist, they do not know the value of their companies. These companies even lack of a sound accounting system. In many cases, as authorized by Mexican Law, the only concepts that are registered in the accounting system are cash revenues and disbursements and due to this, the owners can not value how much they have invested in their company. Much worst there, is a saying in Mexico that states “rich company, poor owner and rich owner, poor company”. The owners or stockholders take all the money away from the company so in many cases companies require capital.
- Related to technology, productivity, quality, flexibility and competitiveness concepts, these companies have either archaic technology or new technology, with many difficulties to access new technology, poor buying activity, bad inventory management, good capacity for innovation in

production products but not in developing new products, high production costs, under utilization of the production facilities and low quality control and competitiveness.

- If we refer to market conditions, these are quite uncertain. The possibility of exporting and selling into new markets does not exist due to low production capacity and bad attention to the customer. They are selling in markets where many competitors are trying to survive and the buying capacity of customers is low.
- On what refers to environment, MSM companies are a heterogeneous non articulated sector with different levels of quality and a lack of infrastructure and uncertain markets. The origin of micro, small and medium enterprises is unemployment and do not care about ecology or sustainable development.

Founded in a research by Maza and Paez⁴, published by IPE⁵, Coparmex⁶ and Fundes⁷ we found two main causes of death for the MSM: The structural ones and the ones of the environment. The structural is management and within the environmental ones we find market and financing among others. Among the causes of death we may found some characteristics of the MSM⁸ companies:

- Lack of a good managerial conduction: Absence of a formal managerial system, for many, the main cause of failure of these companies. This failure occurs due to the lack of managerial and financial concepts by the managers or by disorganization. The worst of all is that symptoms are invisible till the problem explodes, but much worst is that the head manager, who is good for everything takes no advise at all; Other problem

⁴ Maza Pereda, Antonio y Paez Aragón, Alejandra, “Causas de mortandad de la micro y pequeña empresa”, México, IPE, COPARMEX y FUNDES

⁵ Instituto de Propositiones Estratégicas, A.C.

⁶ Confederación Patronal de la República Mexicana (Entrepreneurial Confederation of the Mexican Republic)

⁷ Fundes is a private Swiss institution founded in 1986 whose objective is to contribute to the progress of Latin America through the strengthening of the enterprise, specifically the median enterprise, applying the concept of “sustainable development”.

⁸ The study is quite limited and it is oriented to the causes of death, based on a documentary exploration and enriched with a questionnaire applied to fifty people (managers of banking branches, officers of entrepreneurial chambers and support institutions oriented to the micro companies), none of these, entrepreneur.

is the non-sustainable growth, that carries the company to a high leverage level, far beyond its capital capacity and the intrinsic value that the cost of capital may allow. Accelerated growth brings the company to invest in long range assets and working capital for which it is not prepared, carrying high operating costs and interest for the debt. It is not the lack of credit what kills the company, it is the lack of a managerial accounting system that could back up the decisions; The lack of a marketing plan carries these companies to a bad distribution system. Small is beautiful, however these companies with a small mind guidance are not able to compete in a global world.

- Problems due to scale: Due to the lack of specialization because these companies are quite flexible, the owner-manager tries to produce everything and does not consider the possibility of outsourcing or buying. These brings out as result higher operating costs, while the main strategy in the world is to lower operating costs; Purchasing is expensive due to low scales and financial costs are high due to excessive investment in inventories; Marketing is quite deficient due to low scale and as a consequence, these companies can not hire salesmen and the owner must do this work.
- Problems related to the environment referring to market: Medium and big companies are selling in specialized markets with small volumes affecting the micro and small companies. As MSM firms do not adapt quickly enough to changes in the market conditions, these represent a loss of market participation. Other factors that have affected MSM companies are free trade among economic blocks and higher quality, productivity and service required by the market. Many times it is not the lack of money that affects MSM companies but the lack of knowledge or ability to read the market indicators. Unfortunately highly qualified professional consultants are not interested in MSM firms, they are much more interested in the glamour and money of big of corporations.

- Problems related to financing difficulties: The lack of credit is many times considered as one of the main causes of death of MSM companies, however we must consider the advance payment of customers as a good source of funds for companies instead of paying the cost of a loan. Many times the cost of a loan is not considered and as the entrepreneur does not take into account the cost of capital, there is not possibility of calculating whether his or her company may be consider a good business, it is almost impossible to calculate if economic value is created or not. We must also take into consideration that banks prefer corporate clients.
- Another cause of death is fear to the tax office because the tax system is quite complicated and due to this complication, many entrepreneurs are tax evaders.

Many micro enterprises are self-work enterprises and are condemned to death. We must not take all these micro companies in consideration, we must change the concept of MSM to what SMEs are.

Zevallos questions the definitions of micro, small, medium and big firms in a paper called "PyME o Empresa Media, representando conceptos", (S&M or SMEs, its conceptualization). Instead of considering a four group classification, he establishes just three, like in most countries of the world. He establishes that micro companies are not important in developed countries, in these countries micro companies are linked to medium companies and small & medium enterprises are considered. The case in Latin America is somehow different.

In Latin America, micro companies are 80% of all enterprises, small and medium are 15% and big companies are only 5% of the universe of companies. What happens in Mexico is that micro enterprises with less than 2 workers are 1.6 million companies, 75.3% of all companies. These companies generate 30% of all the working positions and 13% of the Gross National Product. The big companies are 1% of all the companies, they create 36% of all the jobs 53% of all the investment and 60% of the Gross National Product.

Are micro enterprises a survival strategy? Partially they are, but the rest are real small firms in which the entrepreneur exists, that's the reason why we do not

consider the Mexican classification of micro, small and medium enterprise, we take the definition of Zevallos of “Empresa Media”(SMEs). And this discussion carried Zevallos to consider 3 sources of entrepreneurial activity:

1. Need, workers who create their own company as a job solution (survival).
2. Entrepreneurial initiative, abilities that link the entrepreneur with his company, “Empresa Media” or SMEs.
3. Stocks, or financial assets, which refers to the stockholders that in most cases have nothing to do with the business, big companies.

To segregate micro enterprises Zevallos suggests, based on a work of Sarahí, that firms with less than 2 workers will not survive in the long range. Based on this, the classification will be:

1. Big companies 1%
2. Median businesses 5%
3. Small companies 14%
4. Micro companies (more than 2 workers) 18%
5. Micro companies (less than 2 workers) 62%

If we consider the Encuesta Nacional de Micronegocios de 1996 (National Survey on Micro Business) referring to four questions made to owners of companies with two workers or less referring to:

1. Structure, organization levels (worker-owner)
2. physical aspects of the firm (whether it has a special place where to work)
3. Reasons for which the firm was founded
4. Perspective

SMEs will count with small firms, median firms and 25.3% of the micro businesses.

- 439,936 micro firms
- 310,336 small firms
- 108,540 medium firms
- 858,812 SMEs (39.3% of all the firms in Mexico)

With these numbers we may calculate that:

- 1% will be represented by big companies
- 39% by SMEs

- 60% micro firms considered as a survival strategy or self job firms.

What is our proposal?

Since September of year 2000 we have been trying to find an answer to the question: How can we give a financial valuation to these SMEs?

We agree with McKinsey when they state “it is our basic belief that managers who focus on building shareholder value will create healthier companies than those who do not. We also think that healthier companies will in turn, lead to stronger economies, higher living standards, and more career and business opportunities for individual”⁹ and the evolution of the world in the last 30 years has been spectacular. In the seventies gold was forgotten as a final reserve for nations, in the eighties the emergence of an active market for corporate control emerged, in the nineties the recognition that many social security systems, in Europe, Asia and Latin America were heading for insolvency was done and the XXI century arrived with big changes from firms, firms of all sizes that must consider the international environment to survive. As Levi¹⁰ establishes:

“There are two principal reasons why international trade has grown rapidly vis a vis overall economic activity:

1. A liberalization of trade and investment has occurred via reductions in tariffs, quotas, currency controls, and other impediments to the international flow of goods and capital.
2. An unprecedented shrinkage of “economic space” has occurred via rapid improvements in communications and transportation technologies and consequent reduction in costs.”

These has caused in Mexico that changes that have occurred since 1983 resulted in a much more aggressive corporate competition within an open economy and technological changes that brought importance to strategy and finance. Firms must be valued in a different way. What happens to SMEs if no valuation exists?

Valuation models have been updated and in many cases models as ROE (return on equity) or ROI (return on investment) have been forgotten in developed

⁹ McKinsey & Co. Inc., Copeland, Tom, Soller, Tim & Murria, Jack, “Valuation, Measuring and Managing the Value of Companies”, John Wiley & Sons, Inc. Third Edition, 2000 p. 3

¹⁰ Levi, Maurice, D. “International Finance”, McGraw-Hill Inc. Third Edition, 1996 p. 4

countries. Emphasis has been made in models that consider economic value and do not take into consideration financial statements data like EVA^{®11} (Economic Value Added) or DCF (discounted cash flow).

Financial Concepts

For some authors financial knowledge evolves by the hand of the banking system so we could go back to the VII century before Christ when the first bill of exchange was signed or when the first farmer asked for some seeds to expand its cultivable land. What we are really trying to demonstrate is that since then the objective of the firm was to maximize its value, to maximize the wealth of its owners. If we are speaking of a firm that is established in a developed country with an efficient financial market, the maximization of wealth will be easy to calculate through the price of the stocks. In a country like Mexico this does not occur.

One mistake will be to consider the maximization of profits as the objective of the firm. What will happen if a firm invites new partners or issues new stock to invest at least in Treasury Bills or in other financial asset? It may maximize its profits, but, will it maximize its owners wealth?

We know that it was during the industrial revolution that capital budget became important due to the big amount of capital that needed to be raised. However as Van Horne¹² establishes it was in the early part of the twentieth century that “corporation finance emerged as a separate field of study, whereas before it was considered primarily as a part of economics....there were many consolidation, the largest of which was the colossal formations of U.S. Steel Corporation in 1900. These combinations involved the issuance of huge blocks of fixed-income and equity securities....Accounting data and financial record, as we know them today, were nonexistent”. A century after it's partially the same in Mexico. We have firms with very well developed accounting systems, maybe even better than in the

¹¹ Stewart III, Benett “The Quest for Value”, Harper Collins, 1991 EVA is a trademark by Stern Stewart & Co.

¹² Van Horne, James C., “Financial Management and Policy”, Prentice-Hall, Fourth Edition, New Jersey, U..S.A.,1977 pp. 3-7

United States, however some SMEs are using an incomplete cash revenues and disbursements accounting system.

Later, during the twenties, firms needed more funds, so more emphasis was on liquidity and financing decisions. Due to the depression of the thirties defensive aspects became important and more financial data required. Financial analysis gained in importance. The emphasis on the forties was on the point of view of the lenders or investors, the outsiders. By the fifties interest was developed in capital budgeting and in the early sixties Franco Modigliani & Melton H. Miller developed their discounted dividend valuation model, article that was published in 1961 in the Journal of Business under the title "Dividend Policy, Growth and the Valuation of Shares". Markowitz Portfolio Theory, developed in 1952 gained importance and during the seventies the Capital Asset Pricing Model or CAPM, developed by Sharpe was refined and the Black and Scholes option valuation model returned financial valuation to the economic grounds.

The economic approach continued during the eighties and the nineties and it was in 1986 when Alfred Rappaport wrote "Creating Shareholder Value, The New Standard for Business Performance". Rappaport's approach focused in the idea that business strategies should be judged by the economic value they create. He criticized the traditional accounting measures as earnings and considered that business strategies should be judged by the economic returns they generate for shareholders and shareholders value approach estimates the economic value of an investment by discounting forecasted cash flows by the cost of capital. The big difficulty is to determine the cost of capital which may be an opportunity cost. He took into consideration that earnings, as determined in the income statement, fail to measure economic due to the fact that a change in accounting methods will not affect cash flow and its economic value, but it will affect earnings; that risk is excluded in the earnings number and business risk and financial risk are necessary parameters to establish economic value; that investment in working capital and in fixed capital are excluded in earnings calculation; that dividends should not be paid if the objective is to maximize earnings; and that time value of money is ignored by

earnings. Rappaport model considers that shareholder value is determined by deducting debt from the corporate value and that corporate value is determined by:

1. “The present value of cash flow from operations during the forecast period
2. Residual value, which represents the present value of the business attributable to the period beyond the forecast period.”¹³

In other word, Rappaport made use of the discounted cash flow method. He also established that the appropriate rate for discounting the firm’s cash flow stream is the weighted average cost of capital, the weighted average cost debt and equity capital. For the cost of debt he considers that what is appropriate is to consider the cost of debt at the moment, an opportunity cost, and that as interest debt is tax deductible, after-tax cost of debt is the right number. For the cost of equity CAPM must be considered in the following formula:

Cost of Equity = Risk-free rate + Beta (Expected return on market-Risk-free rate)

What must be considered for Mexican SMEs since their stocks are not negotiated in any financial market in Mexico?

To take a cost of opportunity and maybe the simplest thing is to come to the yield expected from the Mexican stock exchange. If you observe graph1, you will find that in the period 2000-2002, the IPC indicates that there was no yield, in fact if someone had invested in the stock exchange with an IPC of 7,130 points on December 30, 1999, he or she would have lost because at the end of 2002, the IPC was in 6,125 points. Of this it might deduce that it had been good to obtain a yield equivalent to that of the Cetes. Why should someone would invest in a company and risk the capital?



Graph 1

¹³ Rappaport, Alfred, “Creating Shareholder value. The new standard for business performance”. New York, N.Y. The Free Press 1986 p. 51.

Saavedra indicates that " it is believed that the best estimation of the premium for risk of the future is the average of the premium for risk observed in the past and this is the reason for which she indicates that the yield expected from the market is the sum of the rate free of risk plus some compensation for the inherent risk in the portfolio of market and that the best estimation of the premium for risk of the future, it is the average of the premium for risk observed in the past "¹⁴

If we agree with Saavedra, this year the investment in stock exchange must generate a percentage yield of six point seventy one, which is the annual rate that has been earned in Cetes until October, sixteen, 2003, plus point forty five. A percentage yield of seven point sixteen, or 7.23% which was the real yield in that period.

Date	Yields		
	Mexican Stock Ex.	Cetes	Price Index
Jan 4,1990	430.40	100,000	15.01
Sep 18, 2003	7,868.28	1,738,249	105.275
% Yield	1728.12%	1638.25%	601.37%
Average per year	23.60%	23.15%	15.26%
Real Yield	7.23%	6.84%	

Source: Banco de México y Bolsa Mexicana de Valores

In 1991 EVA or Economic Value Added was developed by G.Bennett Stewart, III, in his book "The Quest for Value". Maybe this EVA is the most used tool to evaluate whether companies create value or if they destroy value. The basis of this model are quite simple it is focused in the maximization of EVA, that is calculated by deducing the cost of capital from the net operating profit after taxes.

$$EVA = NOPAT - \text{Cost of Capital}$$

What is capital? Capital is defined by Stewart as "the sum of all cash that has been invested in a company's net assets over its life and without regard t financing form,

¹⁴ Saavedra García, María Luisa, "La Valuación de Empresas Enfoques Teóricos y Aplicación de los Modelos Black y Scholes, Valor Económico Agregado y Flujo de Efectivo Disponible en México: 1991-2000" Graduate thesis, Universidad Nacional Autónoma de México, Facultad de Contaduría y Administración, México, 2002 p. 23

accounting name, or business purpose”¹⁵ This capital has a cost, the rate that must be compared with the return on total capital. The rate of return, r , is computed by dividing NOPAT by the total capital employed in operations.

$$r = \text{NOPAT} / \text{capital}$$

Calculation of NOPAT and capital is not so easy, Stewart establishes that it may be calculated from two different perspectives, the financing perspective or the operating perspective. From financing perspective the procedure is as follows:

Nopat =	Capital =
Income available to common capital	Common equity
+ Increase in equity equivalents	+Equity equivalents
=Adjusted net income	= Adjusted common equity
+ Preferred dividend	+ Preferred stock
+Minority interest provision	+Minority interest
+Interest tax after tax	+ All debt that pays interest

From the operating perspective calculus are:

Nopat =	Capital =
Sales	Net working capital
-Operating expenses	+Net fixed assets
-Taxes	

What this model searches is to identify the capital, which was invested in the company. This may be obtain from right side of the balance sheet, liabilities that pay interest plus equity or from the left side of the balance sheet, net working capital (current assets – current liabilities that pay interest) plus non current assets. The value of debt and of equity should be the market value. To this capital a cost calculated by the CAPM is assigned.

Another important number of the model is the NOPAT or net operating profit after taxes, to which the cost of capital is reduced to find if the company generates value or not.

¹⁵ Stewart, G. Bennett, "The Quest for Value", HarperCollins, Publishers, Inc., U.S.A., 1991, p. 86

Is it Difficult to Apply These Concepts Through Out the World

“Does everything that we have described about valuation apply outside the United States? Absolutely. This does not mean that all capital markets are as efficient as the U.S. market or that all managers outside the United States are as focused on shareholder value creation. But our ideas about valuation can help managers everywhere make better strategic decisions.”¹⁶ Copeland, Koller & Murrich asked themselves this question. We will try to adapt these concepts to the SMEs, however there are at least accounting differences. Among others:

1. Accounting standards are different all over the world and some countries are permitting the use of International Accounting Standards, however differences prevail in:
 - a. Provisions, noncash expenses that are made by companies, reducing income and increasing liabilities.
 - b. Pensions, or pensions systems that differ from one country to another, having pension plans or just accounted as a liability.
 - c. Fixed-asset revaluation as occurs in Mexico, to take into account the inflation impact. This revaluation increases fixed assets and equity, as well as provisions for depreciation.
 - d. Deferred taxes, that may derived from fixed-asset revaluation or accelerated depreciation.
 - e. Non operating assets, when companies own minority interest in the common stock of their business partners that remain accounted at their purchase price.
2. Taxation systems vary widely in the world with corporate taxes that vary from 12% in Switzerland to 34% in Mexico. For the companies it is difficult to deal with corporate and personal tax integration.
3. Cost of capital, which basic approach is the same, weighted average cost of capital, however market risk varies from one country to another, and the definition of country risk is not precisely defined. For underdeveloped

¹⁶ McKinsey & Co. Inc., Copeland, Tom, Soller, Tim & Murria, Jack, “Valuation, Measuring and Managing the Value of Companies”, John Wiley & Sons, Inc. Third Edition, 2000 pp. 353-371

countries many analyst consider adequate to use embi (emerging markets bond index), developed by J.P.Morgan

How have the Financial Concepts Evolved in Mexico

Based in these works, Miguel Ochoa, Guillermo Quiroz and Raúl Velarde wrote in 1998 " Rion, Geo y Valore, Tres Instrumentos para Generar Valor" (Rion, Geo and Valoree, Three Instruments To generate Value), book published by the IPADE¹⁷, turning into the only Mexican alternative position for valuing if a company is capable of generating economic value. In this model to the total assets they reduce the number of cash and securities, which they consider to be not indispensable for the operation and obtain the operative investment. To this operative investment they reduce the liabilities without explicit cost and obtain the net operative investment (ION), investment with cost to be able to operate. With the ION of two years they calculate the operative clear investment average, base for the calculation of the return of the operative clear investment (RION). The Rion is calculated dividing the operating profit between the ION, number that multiplies for 1 less the rate of tax to obtain the yield of the operative clear investment after tax (RIONDI). To this number they reduce the cost of capital after tax (K), and if it is higher, determine that the company generates wealth. With this number, Riondi - K, multiplied by the ION, determines the economic operative generation (GEO). It sounds complicated, motivate for which it is suitable to see its calculation with an example. We will use information of Cemex from 1999 to September, 2003, following the order of the description of the method. Cemex income statement data for September 2003 is from the last twelve months, from October 2002 to September 2003.

¹⁷ Instituto Panamericano de Alta Dirección de Empresas (High Management of Companies, Panamerican Institute)

	1999	2000	2001	2002	September 2003
Total Assets	130,387,492	162,300,370	166,206,938	169,210,893	178,211,554
Cash & Receivables	3,587,027	3,172,808	4,386,974	3,835,160	4,495,457
Operating Investment	126,800,465	159,127,562	161,819,964	165,375,733	173,716,097
Non interest Liabilities	8,750,310	9,871,032	11,394,516	15,389,174	14,468,456
Net Operating Investment	118,050,155	149,256,530	150,425,448	149,986,559	159,247,641
Average Net Operating Investment	117,956,038	133,653,343	149,840,989	150,206,004	154,617,100
Operating Earnings	15,786,953	17,032,250	16,931,205	13,915,358	14,327,781
Return on Net Operating Investment	13.38%	12.74%	11.30%	9.26%	9.27%
Return on Net Operating Investment after Taxes (Renoit)	7.49%	7.14%	6.33%	5.19%	5.19%
Cost of Capital* K	7.23%	7.23%	7.23%	7.23%	7.23%
Renoit - K	0.26%	-0.09%	-0.90%	-2.04%	-2.04%
Operating Economic Generation	312,472	-125,077	-1,352,029	-3,067,294	-3,155,259

* Real Average Yield Based on the Mexican Stock Price Index from January 4, 1990 to September 18th. de 2003

We can deduct that with a cost of capital of 7.23%, Cemex increased its capital in 1999, however from year 2000 on the company destroyed it.

As in case of EVA, in this model investment (equivalent to the capital concept of Stewart) is calculated reducing the assets that must be in hands of the stockholder or assets that do not create value, as cash, and the liabilities without cost. This investment must generate a yield that overcomes at the time capital cost and calculates if the company generates value or not.

Why using the Mexican Model?

First of all, as Mckinsey states, "Some metrics are indeed better than others. We prefer economic measures (such as economic profit) to accounting-based measures (such as earnings per share). First, empirical research suggests that cash flow, not accounting earnings, is what drives share price performance.

Second, it's easier to understand short versus long-term tradeoffs when you use an economic measure. Finally, you can better understand the sources of value if you use economic measures.....However, there is no perfect performance

measure.”¹⁸ This model, Rion, Geo and Valore, accomplishes to be an economic measure, however as well as EVA, based in the accounting system.

Second, as discussed before, accounting standard, cost of capital and taxation systems, among others, are different all over the world. Why must we take a metric that may not apply to Mexican companies if we have a Mexican model?

But the problem remains. Can we apply this model to Mexican SMEs?

The method of Rion, Geo y Valore is attractive but to apply it in the average company in Mexico represents a serious problem. In the universe of the SMEs companies, micro, small and medium companies exist. Specially the first ones do not use the average accounting system, only cash revenues and disbursements. In fact they do not know the amount of the investment, that Stewart would call “capital”. In many of other companies, the accounting system serves only to expire with the fiscal requirements and maybe to obtain a credit. The importance of management accounting is not known by the managers of these companies and then it is practically impossible to use this method, which is simpler than EVA, which cannot be used either. We do not criticize the method, we only indicate that if the executives of the companies, specially the medians, do not show a change of mentality and they use management accounting, they will not be able to value adequately their companies, they will not know whether the strategies are working or not, they will not know how they and their companies are performing.

However in some SMEs, it is possible to use the method because they are using adequate accounting systems. They have the same accounting system as any other big company.

What to do with the companies that just care about cash revenues and disbursements?

A possible alternative for the average company would be to use a model derived from the discounted cash flow model, based in the state of changes in the financial position when the companies have "normal" a accounting system. For those companies that only use cash revenues and disbursements, this method facilitates it, since it is as simple as to let them know if they have a surplus or a lack of cash.

¹⁸ Mckinsey, op.cit. p. 55

The lack of knowledge of the amount of the investment in the business can be substituted with an inventory of the assets which they possess and the market price of these assets, then dividing the cash flow, in case of surplus, by the investment. In this way they will know the yield that they obtain for the capital and deduct whether they have a good business or a bad business. This will be the base of diagnosis to correct sales policies, supplies policies, investment policies in fixed assets or investment policies in working capital.

We must remember what Rappaport established: “To derive cash flow from operations we begin with sales. Operating expenses are then deducted...After subtracting income tax from operating profit we arrive at operating profit after taxes. To convert this amount to a cash basis, depreciation and other expenses deducted as part of operating expenses are added back. Investment in working capital and fixed capital, which are classified by activities, are then deducted to arrive at a cash flow from operations. These cash flows when discounted by the appropriate cost of capital serve as the essential basis for valuing businesses and the value created by their strategies.”¹⁹ What Rappaport wrote is essentially what our proposal is for SMEs.

We could do this diagnosis since we had access to social companies, micro, small and medium companies, to design a model of autodiagnosis of its needs of training. With these bases we detected some lacks, inside which stands out a model of financial appraisal. The model of diagnosis was done with non governmental organizations of Jalisco, Chihuahua, Oaxaca and the Distrito Federal, for Professio²⁰, nevertheless the acquired experience served to detect the need of a model of financial appraisal.

¹⁹ Rappaport. Op. Cit. pp. 88-89

²⁰ Professio is a program directed to the strengthening of the Social Companies by means of the development of a model of training and technical assistance. Initiative of the Fundación Vamos (Vamos Foundation) with the Centro Mexicano para la Filantropía (CEMEFI) (Mexican Center for the Philanthropy) and the Fondo Multilateral de Inversiones del Banco Interamericano de Desarrollo (BID-FOMIN) (Multilateral Fund of Investments of the Interamerican Bank for Development).